

DEPARTMENT OF LABOR & ECONOMIC GROWTH

DIRECTOR'S OFFICE

MICHIGAN BOILER RULES

Filed with the Secretary of State on July 6, 2006
These rules take effect November 6, 2006

(By authority conferred on the director of the department of labor & economic growth by sections 4 and 4a of 1965 PA 290, Executive Reorganization Order Nos. 1996-2 and 2003-1, MCL 408.754, 445.2001 and 445.2011)

R 408.4012, R 408.4024, R 408.4025, R 408.4027, R 408.4028, R 408.4031, R 408.4032, R 408.4033, R 408.4039, R 408.4045, R 408.4047, R 408.4057, R 408.4058, R 408.4059, R 408.4065, R 408.4073, R 408.4091, R 408.4096, R 408.4103, R 408.4107, R 408.4114, R 408.4119, R 408.4121, R 408.4125, R 408.4127, R 408.4133, R 408.4139, R 408.4163, R 408.4177, R 408.4182, R 408.4197, R 408.4302, R 408.4503, R 408.4507, R 408.4510, R 408.4511, R 408.4512, R 408.4566, R 408.4601, R 408.4626, R 408.4701, and R 408.4711 of the Michigan Administrative Code are amended, R 408.4120 is added to the Code and R 408.4303, R 408.4304, R 408.4518, R 408.4602, R 408.4603, R 408.4604, R 408.4605, R 408.4606, R 408.4607, R 408.4608, R 408.4609, R 408.4610, R 408.4611, R 408.4612, R 408.4613, R 408.4614, R 408.4615, R 408.4616, R 408.4617, R 408.4618, R 408.4619, R 408.4620, R 408.4622, R 408.4623, R 408.4624, R 408.4625, R 408.4627, R 408.4628, R 408.4631, R 408.4637, R 408.4660, R 408.4667, R 408.4689, R 408.4704, R 408.4707, R 408.4727, R 408.4731, R 408.4735, R 408.4739, R 408.4743, R 408.4747, R 408.4750, R 408.4801, R 408.4851, R 408.4853, R 408.4856, and R 408.4893 of the Code are rescinded as follows:

PART 1. GENERAL PROVISIONS

R 408.4012 Definitions.

Rule 12. (1) "Accident" means a sudden and accidental breakdown of a boiler or a part of a boiler that results in physical damage to the boiler which necessitates the repair or replacement of the boiler or a part of the boiler. "Accident" does not mean a breakdown due to any of the following unless a unique or unusual explosion hazard exists as a result of the breakdown:

- (a) Normal erosion.
- (b) Corrosion.
- (c) Wastage of metal that requires restoration.
- (d) Leaking tubes.
- (e) Weakened metal, such as water legs or handhole areas.

(2) "Act" means 1965 PA 290, MCL 408.751 et seq.

(3) "Aftercooler" means a device used for lowering the temperature of a boiler blowoff discharge before it enters the building drain.

April 19, 2006

(4) "Alteration" means any change in the item described on the original manufacturer's data report that affects the pressure-containing capability of the boiler or its piping. A nonphysical change such as an increase in the maximum allowable working pressure (internal or external) or design temperature of a boiler or its piping is an alteration.

(5) "ASME," "ASME boiler and pressure vessel code," "ASME code," or "code" means the boiler and pressure vessel code of the American Society of Mechanical Engineers, with addenda, as prescribed and approved by the council of the society.

(6) "Authorized inspector" means an individual who is designated as an authorized inspector by an authorized inspection agency, who holds a valid certificate of competency and national board commission with an "A" or "B" endorsement, and who is employed by the authorized inspection agency that assumes responsibility for the individual's actions.

(7) "Board of boiler rules" or "board" means the board created by the act.

(8) "Boiler assembler" means a corporation, company, partnership, or individual who assembles a boiler that has been delivered in pieces. For ASME code section I power boiler assemblies, a boiler assembler shall possess the appropriate code symbol stamps.

(9) "Boiler blowoff piping" means the piping, fittings, and valves from the boiler to the blowoff tank, blowoff separator, or other safe point of discharge through which the water in the boiler may be blown out under pressure, except for drains such as those used in water columns, gauge glasses, or piping to feed water regulators and similar devices.

(10) "Boiler blowdown vessel" means an unfired pressure vessel into which water is discharged above atmospheric pressure from a boiler blowoff line.

(11) "Boiler installation" means the installation of a boiler, including all connected piping, valves, fittings, flanges, firing equipment, controls, appurtenances, and auxiliaries. The term includes the field assembly of boilers.

(12) "CSD-1" means the ASME code for controls and safety devices for automatically fired boilers.

(13) "Certificate of competency" means a certificate issued to a person who has passed an examination for inspectors prescribed by the board of boiler rules.

(14) "Chief inspector" means the chief boiler inspector appointed under the act.

(15) "Condemned boiler" means a boiler that has been inspected and declared unsafe or rejected for use by an inspector who is qualified to take such action and who has applied a stamping or marking designating its rejection.

(16) "Department" means the department of labor and economic growth.

(17) "Deputy inspector" means an inspector who is licensed under the act and appointed by the director.

(18) "Existing installation" means and includes any steam boiler constructed, installed, placed in operation, or contracted for before August 10, 1917, or any hot water heating or supply boiler constructed, installed, placed in operation, or contracted for before the effective date of these rules.

(19) "External inspection" means an inspection which is conducted while the boiler is under pressure and which does not involve examination of the internal surfaces of the pressure parts of the boiler.

(20) "Field assembly" means assembling prefabricated boiler pressure parts without field welding or riveting.

(21) "Field erection" means the erecting and assembling of boiler parts by welding, riveting, or other fabrication processes.

(22) “Flash tank” means a closed vessel equipped with internal baffles or an apparatus for the purpose of separating moisture from flash steam as it passes through the vessel.

(23) “Hobby” means an interest or activity that a person pursues in his or her leisure time without compensation.

(24) “Hot water heating and hot water supply boiler” means a boiler that operates at pressures of not more than 160 psi or temperatures of not more than 250 degrees Fahrenheit, at or near the boiler outlet.

(25) “Inspector” means an individual who holds a valid certificate of competency and national board commission.

(26) “Internal inspection” means an inspection made when a boiler is shut down and handholes or manholes are opened for inspection of the interior.

(27) “Licensed boiler installer” means a person licensed under the act to engage in the business of making piping connections to a boiler or in the business of field-assembling boilers.

(28) “Licensed boiler repairer” means a person licensed under the act to engage in making or supervising all phases of boiler repair, alteration, or field erection.

(29) “Labeled” means devices, equipment, appliances, or material to which have been affixed a label, seal, symbol, or other identifying mark of a nationally recognized testing laboratory, inspection agency, or other organization concerned with product evaluation that maintains periodic inspection of the production of the items and by whose label the manufacturer attests to compliance with applicable nationally recognized standards.

(30) “Michigan special” means a boiler that is not built in compliance with the code. A boiler is a noncode boiler if it is not stamped with the ASME code symbol stamp.

(31) “Miniature boiler” means a power boiler that does not have any of the following:

- (a) An inside diameter of the shell of more than 16 inches.
- (b) A working pressure of more than 100 psig.
- (c) A gross volume of more than 5 cubic feet.
- (d) More than 20 square feet of heating surface.

(32) “Listed” means equipment, appliances, or material included in a list published by a nationally recognized testing laboratory, inspection agency, or other organization concerned with product evaluation that maintains periodic inspection of production of listed equipment, appliances, or materials, and whose listing states either that the equipment, appliances, or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner. The authority having jurisdiction shall utilize the system employed by the listing organization to identify a listed product.

(33) “Miniature locomotive boiler” means a miniature hobby steam locomotive boiler which operates on a narrow gauge track that is less than 24 inches wide and which is for public display or use.

(34) “NBIC” means national board inspection code.

(35) “New boiler” means a boiler constructed, installed, placed in operation, or contracted for after July 1, 1966.

(36) “Nonstandard boiler” means a boiler that does not bear the national board stamping or the stamp of any state or political subdivision which has adopted a standard of construction equivalent to that required by the board of boiler rules.

(37) “Owner or user” means a person, firm, partnership, or corporation that owns or operates a boiler within this state.

(38) “Portable boiler” means a boiler which is primarily intended for temporary location and which is, by its construction and usage, obviously portable.

(39) “Reinstalled boiler” means a boiler which is removed from its original setting and which is reinstalled at the same location or reinstalled at a new location.

(40) “Rental boiler” means a boiler which is in temporary use for not more than 1 year and which may or may not be installed inside a boiler room, temporary room, or temporary shed or without external covering.

(41) “Repair” means the work necessary to restore a boiler or its piping to a safe and satisfactory operating condition.

(42) “Safe point of discharge” means a point of discharge that will protect personnel and property from injury due to discharge.

(43) “Special inspector” means a boiler inspector who holds a license in the state of Michigan pursuant to 1965 PA 290, MCL 408.751 et seq. and who is regularly employed by an insurance company authorized to insure against a loss from boiler accidents in this state or by any city that is exempt under the act and has an authorized boiler inspection department.

(44) “Standard boiler” means a boiler that bears the stamp of the national board of boiler and pressure vessel inspectors or of another state or political subdivision which has adopted a standard of construction equivalent to that required by the board of boiler rules of this state.

(45) “Traction boiler” means a boiler designed for the express purpose of pulling farm equipment or to convert steam power into flywheel energy driving farm apparatus such as threshers, saws, or grinding equipment.

(46) “Used boiler” means a boiler that is being reinstalled by the same owner.

(47) “Water heater” means a heater for use in commercial or industrial sizes providing corrosion resistance for supplying potable hot water at pressures not exceeding 160 psi or temperatures not exceeding 210 degrees Fahrenheit. A water heater that does not exceed any of the following is exempt from these rules:

- (a) A heat input of more than 200,000 BTU per hour.
- (b) A water temperature of more than 210 degrees Fahrenheit.
- (c) A nominal water-containing capacity of more than 120 gallons.

R 408.4024 Adoption of national board inspection code (NBIC) by reference.

Rule 24. (1) The owner shall ensure the inspection, repair, and alteration of boilers, piping, and blowdown vessels is in accordance with the national board inspection code, 2004 edition, and 2005 addenda except as modified by these rules. The code and 2005 addenda are adopted by reference in these rules and are available for inspection at the Michigan Department of Labor & Economic Growth, Bureau of Construction Codes and Fire Safety, 6546 Mercantile Way, Lansing, Michigan 48911 or from the National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Avenue, Columbus, Ohio 43229, at a cost as of the time of adoption of these amendatory rules for a total of \$150.00.

(2) The accreditation program described in the NBIC for repairs and alterations to pressure retaining items is mandatory for repairs to all power boilers and high pressure high temperature water boilers and alterations to any boiler not exempt by these rules. Repair companies in possession of a certificate of authorization issued by the national board of boiler and pressure vessel inspectors to repair and alter pressure retaining items shall have in their employ an individual with an appropriate class repairer license issued by the boiler division of the department. Repair companies not currently in possession of the certificate of authorization or a

certificate of authorization issued by ASME shall have 1 year from the date of adoption of this rule to secure the certificate. Companies currently in possession of a valid certificate issued by ASME have until the next certificate review or 1 year, whichever is greater, to secure the certificate of authorization identified above. The board may waive the time requirement if appropriate justification is presented.

(3) Where the text of the NBIC refers to the “certificate holder,” the reference shall apply to all licensed boiler repairers, except when the reference is in relation to completion of NBIC forms and NBIC stamping, the reference shall refer to repair companies in possession of a valid certificate of authorization issued by the national board of boiler and pressure vessel inspectors to repair and alter pressure retaining items.

(4) The standard welding procedures referenced in the NBIC are accepted for use in this state, but are not mandatory. A licensed boiler repairer who elects to use 1 or more of the standard welding procedures shall file a list of the standard welding procedure identification numbers with the boiler division of the department before conducting any repairs or alterations requiring welding.

R 408.4025 ASME code; adoption by reference.

Rule 25. (1) A boiler shall be constructed as prescribed by these rules and the ASME boiler and pressure vessel code, 2004 edition, and its 2005 addenda. Sections I, II, III, IV, V, VIII, IX, X, XI, of the code, the 2005 addenda and ASME B31.1-2004 Power Piping are adopted by reference in these rules and are available for inspection at the Michigan Department of Labor & Economic Growth, Bureau of Construction Codes and Fire Safety, 6546 Mercantile Way, Lansing, Michigan 48911 or from the ASME International, 22 Law Drive, Fairfield, New Jersey 07007, at a cost as of the time of adoption of these amendatory rules of \$10,900.00 and \$265.00 respectively.

(2) The board may accept pressure-retaining items which have been constructed to standards other than ASME standards and which have been accepted by application of the national board of boiler and pressure vessel inspectors’ criteria for registration procedure.

(3) The owner shall not recalculate design maximum allowable working pressures based on ASME codes published after 1998 for boilers in-service before December 31, 1998.

R 408.4027 Adoption; ASME code CSD-1.

Rule 27. (1) The owner shall ensure that the assembly, maintenance, operation, and testing of controls and safety devices is in accordance with manufacturer’s instructions and ASME code CSD-1, 2004 edition, and its 2005 addenda, except as modified by these rules. The code and the 2005 addenda are adopted by reference in these rules and are available for inspection at the Michigan Department of Labor & Economic Growth, Bureau of Construction Codes and Fire Safety, 6546 Mercantile Way, Lansing, Michigan 48911 or from the American Society of Mechanical Engineers, 22 Law Drive, Fairfield, New Jersey 07007, at a cost as of the time of adoption of these amendatory rules of \$65.00.

(2) An owner or user of a boiler system shall ensure that the assembly, maintenance and testing of controls and safety devices is conducted by an individual with a valid mechanical contractor license with the appropriate classification pursuant to 1984 PA 192, MCL 338.971 et seq.

(3) An owner or user shall provide the inspector, at the time of certificate inspection, with evidence showing what tests have been completed annually. The evidence shall be a dated and signed service report or checklist, listing each control and safety device tested with the

manufacturer's name, model number, set point, and actual operational test point. An example of a report or checklist may be found in CSD-1 2004 edition, appendix C. If an owner does not provide the inspector with the required evidence of annual testing for each year between certificate inspections, then the inspector may issue a certificate of inspection for a term less than that stated in R 408.4057.

(4) The owner, user, or operator of a boiler system shall ensure that the daily, weekly, and monthly operational checks are performed and documented pursuant to the manufacturer's instructions and these rules. CSD-1 2004 nonmandatory appendix D contains a recommended checklist for additional information on periodic checks.

R 408.4028 Manufacturer's data reports; filing.

Rule 28. A manufacturer's data report for boilers shall be signed by an authorized inspector and shall be filed by the manufacturer with the chief inspector before installation. A data report that is signed by an authorized inspector and the ASME stamp on the boiler denotes that the boiler has been constructed in accordance with these rules. If a boiler is of special design, blueprints showing details of the proposed construction shall be submitted to the chief inspector and his or her approval shall be secured before construction is started.

R 408.4031 Installation and reinstallation of boilers.

Rule 31. The owner shall ensure that the installation of a new boiler or a reinstalled boiler is in accordance with the requirements of these rules and the ASME boiler and pressure vessel code, 2004 edition, which is adopted by reference in R 408.4025.

Exception: The ASME code requirement for the completion of a P4B data report for the installation of mechanically assembled boiler external piping is not required.

R 408.4032 Non-boiler external piping; power boilers; adoption of standards by reference.

Rule 32. (1) The owner shall ensure that the installation of piping not covered by the ASME boiler and pressure vessel code, section I, 2004 edition, is installed as prescribed by the ASME code for pressure piping, B31.1, 2004 edition and its 2005 addenda adopted by reference in R 408.4025.

(2) The owner of a chemical plant or petroleum refinery shall comply with subrule (1) of this rule or shall ensure the installation is installed as prescribed by the ASME code for chemical plants and petroleum refineries, B31.3, 2002 edition.

(3) A licensee under this rule is not required to possess an ASME code symbol stamp, but shall hold a valid installer's license.

(4) The owner shall ensure that the installation of all of the following piping is in accordance with subrule (1) of this rule:

- (a) Blowoff piping beyond the second valve out to the safe point of discharge.
- (b) Steam piping out to the load.
- (c) Feed-water piping from the pump.
- (d) Condensate piping.

R 408.4033 Permits; documentation for installation, reinstallation, alteration, and repair of boilers, boiler external piping, and non-boiler external piping.

Rule 33. (1) All of the following provisions apply to installation permits:

(a) A person shall not install, or reinstall, a boiler without holding a proper license and first securing a permit from the boiler division of the department. The licensee applying for the permit shall ensure that work does not proceed until an approved permit has been secured.

(b) A person shall not install or replace welded pipe without holding a proper license and first securing a permit from the boiler division of the department. The licensee applying for the permit shall ensure that work does not proceed until an approved permit has been secured.

(c) A person shall not install nonwelded pipe without holding a proper license. A permit is not required.

(2) All of the following provisions apply to repair and alteration permits or reports:

(a) A person shall not alter or repair a boiler without holding a proper license and first securing a permit from the boiler division of the department. The licensee applying for the permit shall ensure that work does not proceed until an approved permit has been secured, except as provided by section 18 of the act.

(b) A person shall not repair or replace welded piping without holding a proper license and first securing a permit from the boiler division of the department. The licensee applying for the permit shall ensure that work does not proceed until an approved permit has been secured, except as provided for in section 18 of the act.

(c) A person shall not replace nonwelded piping without holding a proper license. A permit is not required.

(d) A person shall not perform welded repairs to nonwelded piping without holding a proper license and first securing a permit from the boiler division of the department. The licensee applying for the permit shall ensure that work does not proceed until an approved permit has been secured, except as provided for in section 18 of the act.

(e) A licensee who makes welded repairs to boilers or boiler external piping requiring the use of the national board "R" symbol stamp shall furnish the boiler division of the department, with 1 copy of the approved permit application, along with reports as required by the NBIC, upon completion of the work.

(f) A public utility or industrial plant that has been granted exemption under section 23 of the act that makes a welded repair to a boiler or boiler external piping, as defined in section I of the ASME code, shall furnish the boiler division of the department with a completed repair report on forms prescribed by the boiler division.

(g) A public utility or industrial plant that has been granted an exemption under section 23 of the act that makes a welded repair to non-boiler external piping shall maintain records of the repairs and make the records available for review as required by the board of boiler rules.

(h) A permit is required for a change in use of an existing boiler or replacement by mechanical methods, without welding, of sections in sectional boilers; heat exchangers; feed water heater or economizer; and, tube bundles. A licensee replacing boiler components required by these rules to be code symbol stamped and national board registered shall provide the boiler division of the department with documentation supporting compliance.

(3) Any changes in the scope of work stated on the original permit application shall be submitted to the inspector for review and approval and reported to the boiler division.

R 408.4039 Permits to alter boiler, piping, or vessel.

Rule 39. (1) The boiler division of the department may issue a permit to alter a boiler, piping, or vessel subject to these rules only to a Michigan-licensed boiler repairer who possesses a valid certificate of authorization from the national board of boiler and pressure vessel inspectors for

alterations or the ASME boiler and pressure vessel committee to build the type of boiler, piping, or vessel being altered. Drawings and calculations covering all details of the proposed alteration shall accompany the application for a permit to alter.

(2) The licensed repairer shall perform the alteration in accordance with the NBIC.

(3) The licensed repairer who makes the alteration shall prepare a report on forms prescribed by the boiler division of the department. The licensed repairer shall furnish an original and 2 copies of the report to the boiler division of the department, and upon request, 1 copy of the report to the boiler owner and user. The report shall clearly indicate what changes have been made to the original construction. The report shall show, in the spaces provided, the manufacturer's serial number of the boiler, the national board number, if assigned, and the Michigan serial number assigned.

(4) The licensed repairer who makes the alteration shall prepare and attach a nameplate that complies with the requirements of the NBIC.

R 408.4045 Registration of boilers.

Rule 45. (1) Within 6 months from the effective date of these rules, all owners or users of boilers and their installations now in use or installed ready for use in the state shall report to the chief inspector on forms prescribed by the department, giving the location, type, capacity, age, and date of installation.

(2) Before transfer of ownership of a boiler is complete, the current owner shall assure all invoices for inspection certificates and inspections for services rendered under his or her ownership are paid in full. Upon completion of transfer of ownership, the new owner of a boiler shall notify the boiler division of the department of change in ownership of a boiler or change in ownership of a location where a boiler is installed. Upon written notification, a new certificate of inspection shall be issued in the name of the new owner.

(3) A boiler owner or user shall notify the boiler division of the department immediately when his or her boiler insurance has been discontinued.

R 408.4047 Exempt boilers.

Rule 47. These rules do not apply to any of the following:

(a) A boiler under federal control.

(b) A swimming pool heater, open car wash heater, and similar types of equipment which do not have intervening valves on the return or discharge piping, which do not have a reduction in pipe size in the return or discharge piping, and which do not generate more than normal circulating pump pressure.

(c) A miniature steam or marine engine used for a hobby.

(d) A boiler used in the power plant of a self-propelled vehicle designed primarily for transportation of persons or property on a highway, except for a vehicle used exclusively on stationary rails or tracks.

(e) A boiler used on a mint farm for mint processing purposes.

(f) A nonvaporizing, organic fluid boiler if the boiler meets all of the following criteria:

(i) The system is vented and does not have valves or restrictions in the pipe between the boiler and the vent.

(ii) The vent pipe is sized so that the thermal expansion of the fluid will not result in an increase in pressure on the system, which is verifiable with engineering data.

(iii) The owner or user provides the boiler division of the department with calculations performed by an engineer, which verify that pressure due to thermal expansion cannot exist in the boiler as installed.

(g) A low pressure steam boiler that has a volume of less than 5 cubic feet and that does not have piped feed connections.

R 408.4057 Boiler inspection.

Rule 57. (1) Once a boiler has been inspected by the chief or deputy inspector and the boiler and its installation approved, all certificate inspections shall be conducted in accordance with the NBIC and these rules by an inspector who is properly licensed to inspect boilers in this state in accordance with the following provisions:

(a) A power boiler, process boiler, or high-pressure, high-temperature water boiler shall receive a certificate inspection annually and shall also be externally inspected annually, while under pressure, within 6 months from the date of the internal inspection.

(b) A low-pressure steam or vapor heating boiler shall receive a certificate inspection biennially.

(c) Hot water heating and hot water supply boilers shall receive a certificate inspection triennially, with an internal inspection at the discretion of the inspector.

(d) A nonvaporizing, organic fluid boiler that is not exempt under these rules shall receive an external certificate inspection triennially.

(e) A miniature hobby locomotive boiler shall receive a certificate inspection annually.

(f) A grace period of 2 months beyond the periods specified in subdivisions (a) to (e) of this subrule may lapse between certificate inspections, and the board may permit longer periods between certificate inspections.

(g) Internal inspection of cast iron boilers shall be at the discretion of the inspector.

(2) The certificate inspection shall be an internal inspection if construction allows, otherwise the certificate inspection shall be as complete an inspection as possible unless specified otherwise under this rule.

(3) The chief inspector, deputy inspector, or a special inspector provided for in the act shall make the inspections specified in this rule.

(4) If, at the discretion of the inspector, a hydrostatic test is necessary, the boiler owner or user shall ensure that the test is performed in the presence of the inspector.

R 408.4058 Extension of internal inspection certificate to 24 months.

Rule 58. (1) An internal boiler inspection may be increased from an annual inspection to a 24-month inspection frequency by approval of the board of boiler rules. An employee delegated by the utility or industrial facility shall apply for the extension. The following information shall be addressed by plant orders, procedures, or policies:

(a) Operator training.

(b) Boiler maintenance.

(c) Water chemistry.

(d) Operating parameters.

(e) Chemical cleaning schedule.

(f) Protective devices.

(g) Boiler external inspection.

(h) Testing of pressure relief valves in accordance with the NBIC. Repairs shall be conducted by the valve manufacturer or a “VR” stamp holder.

The information may be contained in 1 document or several if 1 document contains references to all other documents addressing the required information.

(2) The plant owner shall establish a review committee. The inspector shall be a member of the committee. The purpose of the committee is to determine the acceptability of a boiler to operate safely for a 24-month period. The committee shall have access to and review all information pertaining to the past operation, maintenance, and repair of the boiler. The review shall be conducted within 30 days after the internal inspection. The committee may decrease the period of time the boiler may operate, but shall not extend the period beyond 24 months. The grace period provided under R 408.4057 does not apply to this rule. The inspector shall indicate the next inspection due date on his or her inspection report to the boiler division of the department.

(3) An external inspection of the boiler shall be conducted while under pressure, within 12 months of the internal inspection.

R 408.4059 Notification for inspection.

Rule 59. The owner or user shall prepare each boiler for internal inspection in accordance with the NBIC and these rules and shall prepare for and apply a hydrostatic pressure test, whenever necessary, on the date specified by the chief inspector, deputy inspector, or special inspector.

R 408.4065 Examinations for inspector licenses; place and time.

Rule 65. Examinations for boiler inspector licenses and certificates of competency shall be held at a location selected by the boiler division of the department, 4 times each year, on the first Wednesday and Thursday in March, June, September, and December.

R 408.4073 Examination fee for boiler inspector’s license.

Rule 73. A fee prescribed by R 408.4038 shall be charged for each applicant taking the examination for boiler inspector’s license and shall accompany the application filed with the department. The fee entitles the applicant to take the examination twice if necessary. An additional fee prescribed by R 408.4038 shall accompany each subsequent application.

R 408.4091 Application for boiler installer’s license.

Rule 91. (1) An application for a boiler installer’s license shall be on a form provided by the boiler division of the department. The applicant shall state the name of the business, firm, partnership, or corporation that the applicant intends to represent in the business of installing boilers and shall provide evidence of his or her past experience in the installation of boilers and evidence of his or her workmanship and engineering skills that would qualify the applicant for examination and licensing.

(2) An applicant for a boiler installer’s license shall have not less than 5 years of experience in all phases of boiler installation in the class of license for which the applicant is applying. A credit of 2 years of experience towards the 5 years of experience may be given for 2 years of experience in the design, construction, manufacture, or inspection of boilers.

(3) The boiler division of the department may verify installations required to be reported on the application to establish the applicant’s minimum practical installation experience in the applicant’s desired license classification.

R 408.4096 Filing of welding procedures.

Rule 96. (1) If welding is employed in the installation or reinstallation of a boiler or piping, then the licensed installer shall file welding procedure specifications and the procedure qualification reports qualified in accordance with the requirements of ASME code section IX, welding and brazing qualifications, with the boiler division of the department, before conducting any installation requiring welding.

(2) A licensed installer who utilizes welding in the installation or reinstallation of boilers or piping shall have available, for the inspector's review, welding procedure specifications and welder performance qualification records to be used or that were used in the installation or reinstallation.

R 408.4103 Examination for boiler installer's license.

Rule 103. (1) An applicant for a boiler installer's license shall be required to take an examination approved by the board of boiler rules. The examination will be held quarterly at a location determined by the boiler division of the department. A score of 70% is required to pass the examination. A passing score on the examination is valid for 3 years. If a license is not applied for in that time, then an applicant shall file a new application for examination.

(2) A licensee wishing to upgrade his or her license to a higher classification shall maintain his or her current license in good standing for a minimum of 1 year and take the examination prescribed in subrule (1) of this rule. A licensee may only upgrade a license 1 classification at a time.

R 408.4107 Annual renewal of boiler installer's license; change of business affiliation.

Rule 107. (1) A boiler installer's license shall be renewed annually upon payment of a fee as prescribed by R 408.4038.

(2) An installer's license shall expire on December 31 of each year and shall be renewed. An application for renewal shall be submitted to the boiler division of the department between September 30 and December 31. A license that is not renewed by January 1 shall be voided and may be reinstated only upon application for reinstatement and payment of both the renewal fee and a reinstatement fee of \$75.00. A person requesting renewal of a license within 3 years after the license is voided pursuant to this subrule is not subject to reexamination for the license, but shall pay both the reinstatement fee and the annual license renewal fee for the current renewal year. A person who fails to renew a license for 3 consecutive years shall meet the requirements of, and take an examination for, the class of license sought.

(3) A licensee who changes business affiliation shall notify the chief inspector, on a form provided by the boiler division of the department, of the name and address of the new business affiliate under which the licensee intends to use his or her license. A fee of \$20.00 shall accompany the notification form.

R 408.4114 Inspection of components and systems in a nuclear power plant.

Rule 114. (1) Preservice (baseline) inspection, in-service inspection, repair, replacement, modification, alteration, examination, testing, records, and reports of individual nuclear components, parts, appurtenances, piping, supports, nuclear systems, applicable associated auxiliary systems, and complete nuclear power plants that are in compliance with all of the requirements of the construction code, at the point in time the requirements have been

completed, irrespective of the physical location, shall be as prescribed in section XI, rules for in-service inspection of nuclear power plant components, of the ASME boiler and pressure vessel code. A copy of the current edition of section XI is available for inspection at the Michigan Department of Labor & Economic Growth, Bureau of Construction Codes and Fire Safety, 6546 Mercantile Way, Lansing, Michigan 48911 or from the ASME International, 22 Law Drive, Fairfield, New Jersey 07007, at a cost as of the time of adoption of these amendatory rules of \$495.00.

(2) The owner of a nuclear power plant shall file inspection plans and schedules, pump and valve testing programs, and requests for relief from section XI of the ASME code requirements with the boiler division of the department.

(3) The nuclear power plant shall maintain compliance with requirements, as prescribed by the Nuclear Regulatory Commission.

R 408.4119 Application for boiler repairer's licenses.

Rule 119. (1) An application for a boiler repairer's license shall be on a form provided by the boiler division of the department. The applicant shall state the name of the business, firm, partnership, or corporation that the applicant intends to represent in the business of repairing boilers and shall give evidence of his or her past experience in the repair of boilers and evidence of his or her workmanship and engineering skills that would qualify the applicant for examination and licensing.

(2) An applicant for a boiler repairer's license shall have at least 5 years of experience in all phases of boiler repair in the class of license for which the applicant is applying. A credit of 3 years of experience towards the 5 years of experience will be given for 3 years of experience in the design, construction, manufacture, or inspection of boilers.

(3) The boiler division of the department may verify repairs required to be reported on the application to establish the applicant's minimum practical repair experience in the applicant's desired license classification. Copies of the boiler division inspection reports of the repairs shall be made part of the application.

R 408.4120 Filing of welding procedures.

Rule 120. (1) If welding is employed in the repair, replacement, or alteration of a boiler or piping, then the licensed repairer shall file welding procedure specifications and procedure qualification reports qualified in accordance with ASME code section IX, welding and brazing qualifications, with the boiler division of the department, before conducting any welding.

(2) A licensed repairer who utilizes welding in the repair, replacement, or alteration of boilers or piping shall have available, for the inspector's review, welding procedure specifications and welder performance qualification records at the work site or other mutually agreed upon location.

R 408.4121 Examination for boiler repairer's license; establishment; administration; nuclear repairer license applicant; certificate of authorization; examination.

Rule 121. (1) The examination for a boiler repairer's license shall be approved by the board of boiler rules. The examination will be held quarterly at a location determined by the boiler division of the department.

(2) An applicant wishing to upgrade his or her license to a higher classification shall take the examination prescribed in subrule (1) of this rule.

(3) The director, upon the request of a company in possession of a valid ASME “N” type certificate of authorization or the national board of boiler and pressure vessel inspectors “NR” certificate of authorization, shall issue, to an individual of the company, a license as a nuclear repairer if the individual, before receiving his or her license, satisfactorily passes the examination prescribed in subrule (1) of this rule.

R 408.4125 Annual renewal of boiler repairer’s license; change of business affiliation.

Rule 125. (1) A boiler repairer’s license shall be renewed annually upon payment of a fee as prescribed by R 408.4038.

(2) A repairer’s license shall expire on December 31 of each year and shall be renewed. An application for renewal shall be submitted to the boiler division of the department between September 30 and December 31. A license that is not renewed by January 1 shall be voided and may be reinstated only upon application for reinstatement and payment of both the renewal fee and a reinstatement fee of \$75.00. A person requesting renewal of a license within 3 years after the license is voided pursuant to this subrule is not subject to reexamination for the license, but shall pay both the reinstatement fee and the annual license renewal fee for the current renewal year. A person who fails to renew a license for 3 consecutive years shall meet the requirements of, and take an examination for, the class of license sought.

(3) A licensee who changes business affiliation shall notify the chief inspector, on a form provided by the boiler division of the department, of the name and address of the new business affiliate under which the licensee intends to use his or her license. A fee of \$20.00 shall accompany the notification form.

R 408.4127 Boiler repairers; classes of licenses.

Rule 127. (1) A class I license allows a licensee to repair a boiler by means other than welding, riveting, or other fabrication process.

(2) A class II license allows a licensee to repair a low-pressure boiler, a hot water supply boiler, and a fire tube boiler of any pressure and to perform work covered by a class I license.

(3) A class III license allows a licensee to repair a water tube boiler designed for a maximum allowable working pressure of not more than 700 psi and a boiler covered by a class II license.

(4) A class IV license allows a licensee to repair or field-erect a boiler of any pressure, except for a boiler that has a nuclear heat source. A licensee who field-erects boilers shall be in the employ of a company in possession of the appropriate ASME code symbol stamps for the type of boiler being erected.

(5) A class V license allows a licensee to erect and repair a boiler that has a nuclear heat source or its parts, appurtenances, or system components. Before a license is issued, an applicant for a class V license shall give evidence of familiarity with and knowledge of all federal rules and regulations regarding the construction of a boiler that has a nuclear heat source and shall be employed by a company in possession of a valid ASME N-type symbol stamp applicable to the portions of any nuclear boiler system he or she proposes to repair.

(6) A class P license qualifies a person to install or repair non-boiler external piping as defined by ASME code B31.1.

(7) A licensed boiler repairer shall secure a permit for a change in use of an existing boiler or replacement by mechanical methods, without welding, of sections in sectional boilers, heat exchangers, feed water heater or economizer, and tube bundles in accordance with R 408.4033.

R 408.4133 Reports of inspection to be filed.

Rule 133. (1) Each company employing licensed boiler inspectors, within 30 days following each boiler certificate inspection made by the inspectors, shall file a report of the inspection with the chief inspector upon appropriate forms provided by the boiler division. Reports of external inspections shall not be required except when such inspections disclose that the boiler is in dangerous condition. Manufacturers or national board numbers shall be reported on all reports of inspection.

(2) The inspector shall leave a signed and dated inspection sticker or inspection report at the inspection location.

(3) The inspector shall record his or her national board of boiler and pressure vessel commission number on the inspection report.

R 408.4139 Rental boilers.

Rule 139. A rental boiler shall be inspected before it is rented and the boiler shall be approved for temporary installation. An inspection certificate for an approved rental boiler is valid for 12 months. A licensed boiler installer shall secure an installation permit in accordance with R 408.4033 each time a rental boiler is reinstalled. The permit application for an installed rental boiler shall be posted at the rental boiler.

R 408.4163 Notification in case of accident that renders boiler inoperative.

Rule 163. (1) If an accident occurs that renders a boiler inoperative, then the owner or user shall immediately notify the chief inspector. For a serious accident, notice shall be given immediately by the quickest method available, and neither the boiler nor any of its parts shall be removed or disturbed before an inspection has been made by the chief inspector, deputy inspector, or special inspector, unless the removal is to save human life. A condition or failure which results in bodily injury or physical damage to equipment or property other than the boiler or which creates a unique or unusual explosion hazard shall be reported as a serious accident.

(2) A detailed accident report shall be submitted by the owner's or user's insurance company boiler inspector on an accident report form furnished by the boiler division of the department. If a boiler is not insured, a state deputy boiler inspector shall submit the required report.

R 408.4177 Reinstallation of used or secondhand boilers; fees.

Rule 177. Reinstallation of a used or secondhand boiler shall only be performed by a licensed boiler installer. A permit fee prescribed by R 408.4038 shall be paid directly to the boiler division of the department and shall accompany the permit to reinstall a used or secondhand boiler.

R 408.4182 Steam kettles.

Rule 182. (1) A fired or electrically heated steam kettle, irrespective of size, that has piped feed connections shall be in compliance with these rules.

(2) A fired or electrically heated kettle, irrespective of size or feed piping connections, shall be in compliance with the requirements of these rules. The owner or user shall report the installation to the chief inspector before the unit is operated. The chief inspector shall assign a deputy inspector to visit the installation location to inspect the kettle to determine its safety for operation. A kettle that is operated at or below 15 psi shall be inspected biennially. A kettle that is operated at more than 15 psi shall be inspected annually.

R 408.4197 Clearance between boilers and other objects.

Rule 197. (1) A licensee performing an installation shall assure that a minimum clearance of 24 inches is provided between a boiler, its controls, firing equipment, and appurtenances and the building walls and partitions or other boilers or machinery. The licensee shall assure that clearances are in accordance with the manufacturer's instructions where required clearances are greater than the minimum required by this rule. The boiler owner shall assure that the clearances are maintained for the life of the boiler and shall not be infringed upon by items in storage.

(2) A licensee may request a deviation from the requirements of this rule by submitting drawings to the chief inspector for review and approval before installation of the boiler. The licensee shall be notified by the chief inspector of the approval or denial of the request.

R 408.4302 Boiler installation.

Rule 302. (1) A boiler shall be installed by a licensed boiler installer in accordance with the requirements of the applicable ASME code referenced in R 408.4031 and as may be required by these rules.

(2) A boiler installer shall file welding procedure specifications and the procedure qualification reports qualified in accordance with the requirements of the ASME code, section IX, welding and brazing qualifications, with the boiler division of the department, before performing any installations requiring welding.

(3) A boiler installer utilizing welding during installation shall have welding procedure specifications, welder performance qualifications, and a quality control manual or procedures to be used or which were used in the conduct of the installation available for the inspector's review.

R 408.4303 Rescinded.

R 408.4304 Rescinded.

PART 5. INSERVICE INSPECTION OF BOILERS

R 408.4503 Owner or user to prepare boiler for inspection.

Rule 503. All boilers and blowoff vessels, except for a boiler which is exempted by these rules, shall be prepared for inspection in accordance with the NBIC and these rules by the owner or user when notified by the chief inspector, deputy inspector, or special inspector. The owner or user shall ensure that all examinations and tests required by the inspector are performed.

R 408.4507 Special hydrostatic test.

Rule 507. (1) At the interval specified by this rule, the owner shall ensure that a special hydrostatic test is performed. The owner shall ensure that the test pressure is not less than 80% of the maximum allowable working pressure and is not more than 1 ½ times the maximum allowable working pressure. The test pressure shall be acceptable to the inspector. The owner shall ensure that the water temperature used to apply the hydrostatic test is not less than 70 degrees Fahrenheit and that the maximum metal temperature is not more than 120 degrees Fahrenheit. Hold time for the examination by the inspector shall be the time necessary for the inspector to conduct the examination, but not less than 10 minutes. The inspector may require

the owner to expose all longitudinal seams, girth seams, boiler supports, and attachments for inspection. All of the following are required for testing:

(a) The owner shall ensure that a test of a riveted boiler is performed at 30 years and every 4 years thereafter. An inspector may require removal of rivets to ascertain their condition.

(b) The owner shall ensure that a test of a lap seam boiler which is less than 36 inches in diameter and which operates at 100 psig or less is performed at 20 years and every 4 years thereafter. A lap seam boiler which is more than 36 inches in diameter or which operates at more than 100 psig shall not operate in this state.

(c) The owner shall ensure that a test is performed on a welded boiler at 30 years and every 8 years thereafter for boilers on a 1 or 2-year inspection frequency and every 9 years for boilers on a 3-year inspection frequency.

(d) The owner shall ensure that a leak test is performed on a mechanically assembled boiler at 30 years and every 8 years thereafter. The hydrostatic pressure shall not exceed the safety/safety relief valve setting. The inspector may require an internal inspection.

(e) The owner may request a waiver of the special hydrostatic test required under this rule to the chief inspector if the boiler stated in the request has been granted an extension of the internal inspection frequency under R 408.4058. If a waiver is granted, the review committee established under R 408.4058 shall evaluate the condition of the boiler during each review to determine if a hydrostatic test is necessary.

(2) The inspector may require a nondestructive examination for seams or weldments that are inaccessible.

R 408.4510 Traction boilers.

Rule 510. (1) A traction boiler is a boiler designed for the express purpose of pulling farm equipment or to convert steam power into flywheel energy driving farm apparatus, such as thrashers, saws, or grinding equipment. Such boilers shall be subject to the following provisions:

(a) They shall be tested hydrostatically every 3 years to a hydrostatic pressure of 1 ½ times working pressure, held for sufficient time to permit visual observation of all seams, joints, supports, and attachments.

(b) All seams, attachments, supports, and joints shall be exposed for each such annual inspection.

(2) Traction boilers used for display or hobby purposes shall not be operated for any other purpose but that for which they were originally constructed.

(3) Lap seam boilers shall not be operated in excess of 100 psi.

(4) Any repairs by welding or riveting to traction boilers shall be made by licensed repair shops only after an approved permit has been obtained and subject to the approval of the inspector before and after repair is made.

R 408.4511 Nonvaporizing organic fluid boilers.

Rule 511. (1) A nonvaporizing organic fluid boiler is a boiler designed to heat, but not vaporize, a fluid in a closed system.

(2) The owner shall ensure that a nonvaporizing organic fluid boiler is constructed in accordance with the ASME boiler and pressure vessel code.

(3) The owner shall ensure that stop valves are located at an accessible point in the supply and return pipe connections as near the boiler as is practicable.

(4) The owner shall ensure that a nonvaporizing organic fluid boiler has the following minimum equipment:

- (a) One operating temperature control and 1 high limit temperature control.
 - (b) A relief valve of sufficient capacity to relieve the excess thermal fluid as a result of thermal expansion verified by engineering calculations provided by the owner or user.
 - (c) A thermometer graduated to not less than 133% of the expected operating temperature.
 - (d) A pressure gauge graduated to not less than 150% of the expected operating pressure.
 - (e) A low level or flow sensing device suitable for operating conditions.
- (5) The owner shall ensure that a fuel train meets the requirements of ASME code CSD-1.

R 408.4512 Miniature hobby locomotive boilers.

Rule 512. (1) A miniature hobby locomotive boiler is designed to be operated on a narrow gauge track of less than 24 inches.

(2) At the initial inspection of a miniature hobby locomotive boiler, the owner shall provide the chief boiler inspector with design specifications and calculations for review and acceptance. If a boiler is approved for use, then the boiler division of the department shall issue an identifying state number and a deputy boiler inspector shall attach it to the boiler.

(3) The owner shall ensure that a miniature hobby locomotive boiler has the following minimum equipment:

(a) A pressure gauge graduated to approximately 1 ½ times the operating pressure, but not more than 4 times the operating pressure.

(b) A means to extinguish the fire in the firebox if of a low water condition.

(c) Two means of feeding water to the boiler, 1 of which shall be operable while the locomotive is stationary.

(d) A water level gauge glass located so that the top of the bottom nut of the gauge glass is approximately 10% of the distance between the crown sheet and the shell, but not less than ½ inch above the crown sheet.

(e) Two safety valves set at not more than 10% above the operating pressure for boilers fabricated after the effective date of the rules. The capacity of the safety valves shall be equal to or greater than the calculated steam generating capacity of the boiler.

(4) The owner shall determine the maximum allowable working pressure of a miniature hobby locomotive boiler by calculation. In place of acceptable calculations, the owner shall subject the boiler to a hydrostatic pressure test of 1 ½ times the owner specified operating pressure.

(5) Triennially, during the certificate inspection, the owner shall hydrostatically test the boiler to not more than 1 ½ times the operating pressure.

(6) The boiler division of the department shall develop procedures, policies, and check lists necessary to accomplish the inspections and tests required by these rules.

(7) Repairs to miniature hobby locomotive boilers are exempt from the licensing and permitting requirements of the act. Repair welding shall be made in accordance with the requirements of ASME code section IX. Welding procedures and performance qualification shall be filed with the boiler division of the department for review.

R 408.4518 Rescinded.

R 408.4566 Inspection and testing of safety valves and safety relief valves.

Rule 566. Inspection and testing of safety valves and safety relief valves shall be conducted in accordance with the NBIC. The manual lift test addressed in the NBIC at RB-8400 may be used instead of the pressure test required by RB-8410.

PART 6. REPAIR OF BOILERS

SCOPE OF RULES FOR REPAIR BY RIVETING

R 408.4601 Repair to riveted boilers.

Rule 601. Repairs to riveted boilers by riveting require the prior approval of the boiler division of the department. The repairs shall be conducted in accordance with the NBIC.

R 408.4602 Rescinded.

R 408.4603 Rescinded.

R 408.4604 Rescinded.

R 408.4605 Rescinded.

R 408.4606 Rescinded.

R 408.4607 Rescinded.

R 408.4608 Rescinded.

R 408.4609 Rescinded.

R 408.4610 Rescinded.

R 408.4611 Rescinded.

R 408.4612 Rescinded.

R 408.4613 Rescinded.

R 408.4614 Rescinded.

R 408.4615 Rescinded.

R 408.4616 Rescinded.

R 408.4617 Rescinded.

R 408.4618 Rescinded.

R 408.4619 Rescinded.

R 408.4620 Rescinded.

R 408.4622 Rescinded.

R 408.4623 Rescinded.

R 408.4624 Rescinded.

R 408.4625 Rescinded.

R 408.4626 Repairs by welding.

Rule 626. Repairs to boilers and piping shall be conducted in accordance with the NBIC.

R 408.4627 Rescinded.

R 408.4628 Rescinded.

R 408.4631 Rescinded.

R 408.4637 Rescinded.

R 408.4660 Rescinded.

R 408.4667 Rescinded.

R 408.4689 Rescinded.

PART 7. BOILER BLOWOFF SYSTEMS

R 408.4701 Design and construction of blowdown vessel reports.

Rule 701. (1) The owner shall ensure that blowdown vessels for use in the state of Michigan are designed and constructed as prescribed by these rules and the ASME boiler and pressure vessel code, section VIII, division 1, entitled "Unfired Pressure Vessels," 2004 edition, and its 2005 addenda which are adopted by reference in these rules and are available for inspection at the Michigan Department of Labor & Economic Growth, 6546 Mercantile Way, Lansing, Michigan 48911 or from the ASME International, 22 Law Drive, Fairfield, New Jersey 07007, at a cost as of the time of adoption of these amendatory rules of \$495.00. National board of boiler and pressure vessel inspector document NB-27, 2004 edition, may be used as a guide for the design of blowdown tanks.

(2) The owner shall ensure that a blowdown vessel has a minimum allowable working pressure of 50 psig and that the installation complies with these rules and the vessel manufacturer's instructions.

(a) The blowdown vessel, its fittings, and connections shall be sized so that the internal pressure does not rise more than 5 psig above ambient pressure during the blowdown.

(b) The blowdown vessel shall be provided with adequate openings to facilitate internal cleaning and inspection. An internal inspection of the blowdown vessel shall be conducted during the certificate inspection of the boiler.

(c) The blowdown vessel shall be provided with the following fittings and connection openings in addition to those provided by the manufacturer for the proper installation and operation of the vessel:

(i) A vent connection.

(ii) A drain connection. A drain connection is not required on a separator.

(iii) A thermometer that has a maximum scale reading of 300 degrees Fahrenheit and that is located in the water outlet from the blowdown vessel.

(iv) A pressure gauge that is graduated from 0 to 30 psig and that is attached to the top of the steam space of the blowdown vessel.

(d) The blowdown vessel shall be installed in a location that prevents it and its connected piping from freezing and shall be installed in a manner that permits both internal and external inspection.

(3) A manufacturer shall provide the boiler division of the department, with the manufacturer's data reports. A data report that is signed by an authorized inspector, together with the ASME code symbol stamp on the vessel, is the record denoting that the blowdown vessel has been constructed in accordance with the ASME code.

(4) The manufacturer shall register all blowdown vessels for use in the state of Michigan with the national board of boiler and pressure vessel inspector.

R 408.4704 Rescinded.

R 408.4707 Rescinded.

R 408.4711 Safe discharge from blowdown system.

Rule 711. A safe point of discharge from a blowdown system shall protect personnel and property from the injurious effects of the discharge and shall not exceed 140 degrees Fahrenheit at the outlet of the blowdown vessel. All safe points of discharge shall be in compliance with all federal, state, and local regulations governing discharges.

R 408.4727 Rescinded.

R 408.4731 Rescinded.

R 408.4735 Rescinded.

R 408.4739 Rescinded.

R 408.4743 Rescinded.

R 408.4747 Rescinded.

R 408.4750 Rescinded.

R 408.4801 Rescinded.

R 408.4851 Rescinded.

R 408.4853 Rescinded.

R 408.4856 Rescinded.

R 408.4893 Rescinded.